III. ALTERNATIVES CONSIDERED

This chapter is divided into three major sections. The first section begins on page III-1 and describes the No-Action Alternative. The second section, beginning on page III-1, describes the selection of the preferred alternative, which was made based on alternative studies and associated agency and public informational meetings conducted from 1994 to 2003. This section addresses mode and highway type options and describes alignment alternative studies and their results, including the reasons why the preferred alternative was selected. The third section begins on page III-11 and describes the key characteristics of the preferred alternative for the Macomb Bypass.

III.A DESCRIPTION OF THE NO-ACTION ALTERNATIVE

The No-Action Alternative would maintain the existing federal, state, county, and township roads within the Macomb area and would encompass only routine maintenance and selective highway improvements. The community, agricultural, and natural resource impacts associated with the preferred alternative would not occur (see Chapter IV). The project purposes related to regional system linkage, improving traffic operations on the local transportation network, and economic development would not, however, be achieved (see Chapter I). The No-Action Alternative is not considered to be a reasonable solution to the transportation needs of the Macomb area.

III.B SELECTION OF THE PREFERRED ALTERNATIVE

The preferred alternative is a freeway proposed in a single location that would allow through traffic to bypass central Macomb. One could consider the following additional options:

- Providing an alternative mode of travel, such as bus transit, for forecast users of US 67 and US 136.
- Improving existing roads through Macomb.
- Building a bypass as an expressway.
- Building a bypass in one of a variety of other possible locations.

The following paragraphs describe why the planning and implementation of an alternative mode of transportation and improving existing roads are not reasonable options and fail to achieve the project's purpose. The reasons why a freeway-type bypass is preferred over an expressway are presented. Other alignments evaluated and not selected for evaluation in this document are described, as well as the reasons they were dropped from detailed consideration.

III.B.1 Use of Other Modes of Transportation

An alternative mode of transportation, such as bus service is not a practical alternative because it would not provide the desired regional highway system linkage described in Chapter I. In addition, it would not contribute to meeting the economic development goals of the region that local plans indicate need the support of an improved highway system. The region served by the proposed action and the surrounding highway network is primarily rural in nature and lacks the density of homes and employment necessary to make viable a transit system serving the general public. This is true even in areas of more concentrated development, such as the City of Macomb. There currently is no public transit serving the City of Macomb or McDonough

County other than Western Illinois University's campus shuttle system. Thus, neither an inter-city transit service or a City of Macomb transit service could be expected to remove enough vehicles from existing US 67 and US 136 to achieve the desired reduction in traffic in central Macomb.

III.B.2 Highway Types

Widen Existing US 136 and US 67

Existing US 67 and US 136 are four-lane roads for almost their entire lengths through the City of Macomb. The capacity of the existing four-lane roads is adequate except in downtown Macomb where congestion occurs. These roads could not be widened further in downtown Macomb without substantial displacement of adjoining land uses. In addition, such an improvement would not meet the project's purpose to reduce downtown traffic and congestion, reduce through truck traffic and reduce travel time for travelers who do not originate or end their trips in Macomb. The needs for completing the system linkage of expressways in west-central Illinois, reducing the travel time of through travelers, and maintaining economic stability in McDonough County would not be met by this alternative. This alternative was eliminated from further consideration because it would not meet the project's purpose.

Four-Lane Design Comparison (Freeway versus Expressway)

An expressway provides access to roadway crossings by either interchanges or at-grade intersections. Accesses to businesses are provided from side roads or service drives and residences are allowed direct access onto the expressway. Access to a freeway is only provided by interchanges with selected public crossroads.

The City of Macomb and McDonough County Board both adopted resolutions supporting a freeway design on February 24, 1998 and July 15, 1998, respectively. (See the August 3, 1998 letter from the City of Macomb and McDonough County in Appendix A.) A freeway design would provide long term preservation of a free flow highway, provide operational access safety in an urban area, and alleviate impacts to the local road system by controlling access locations. Residential subdivisions adjacent to local roads, such as Adams Street, also expressed a preference for a freeway design during the public involvement process.

Furthermore, future increases in traffic at expressway intersections in close proximity to an urbanized area have the potential to decrease safety and, potentially, travel time savings because of the addition of traffic signals. A freeway design, which does not allow direct access at intersections, would be more effective in meeting the project's purposes of reducing congestion in and around Macomb (by preserving the free-flow integrity of the four-lane facility), increasing safety, and reducing travel times.

Thus, the preferred alternative assumes a freeway design criterion and this criterion was assumed during the selection of the alignment for the preferred alternative, as described in the following sections.

III.B.3 Alignment Studies

Selection of a preferred alternative for evaluation in Chapter IV was based on alignment alternative studies conducted from 1994 to 2003. The objective of the studies was to identify a preferred Macomb Bypass alignment within either a Northwest/Northeast Corridor combination or a South/Northeast Corridor combination.

Thirty (30) alignments were developed and screened during the course of the study. Screening of the alternatives was a collaborative process involving public agencies (including the US Environmental Protection Agency, the US Department of Interior, the US Army Corps of Engineers, the Illinois Department of Natural Resources, and the Illinois Department of Agriculture), local agencies (including the City of Macomb and the McDonough County Board), business leaders, neighborhood groups, and interested citizens. Numerous resources were considered to develop an alternative that would provide efficient travel with minimal disruption to the community and to environmental resources.

1997 to 1998 Alignment Studies

In 1997, the following alternatives, shown on Exhibit III-1, were brought forward for detailed analysis:

- Northwest Corridor – NW-1, NW-2 and NW-3.
- Northeast Corridor – NE-1, NE-3 and NE-9.
- South Corridor – S-1, S-2 and S-5.

Further study of these nine alternatives resulted in the elimination of five of these alignments: NW-1, NE-1, NE-3, S-1, and S-2. The alignments carried forward for additional study were NW-2, NW3, NE-9, and S-5. A quantitative comparison of these alignments appears in Table III-1. This decision was based on the following findings:

- Reasons NW-1 was withdrawn from further study:
  - Greater flood plain impacts – 4.7 hectares (11.6 acres) versus 1.6 hectares (4.0 acres) for NW-2 and NW-3.
  - Greater wetland impacts – 3.0 hectares (7.3 acres) versus 0.2 hectares (0.6 acres) for NW-2 and 0.0 for NW-3.
  - Severance of Wetland 55 (see Exhibit III-2b), which is a high quality wet meadow.
  - Substantial impacts to the Thistle Hill Nature Reserve.
  - Impacts higher quality of woodland.
  - Potential impacts to the habitat of the golden-winged warbler and sharp-shinned hawk. The golden-winged warbler is an Illinois endangered species of bird and the sharp-shinned hawk is a species of bird on the Illinois watch list.
  - Potential impacts to the Hills Thistle, an Illinois threatened plant species.
- Reasons NE-1 and NE-3 were withdrawn from further study:
  - Greater wetland impacts – 0.5 hectares (1.2 acres) versus 0.2 hectares (0.5 acres) for NE-9.
  - Substantial impacts to three wetland seeps.

Table III-1. 1997 to 1998 Design Characteristics and Environmental Impacts

Impacts	Alternative Alignments								
	Northwest Bypass			Northeast Bypass			South Bypass		
	NW-1	NW-2	NW-3	NE-1	NE-3	NE-9	S-1	S-2	S-5
Alignment Characteristics									
• Length in kilometers (miles)	9.3 (5.78)	9.78 (6.08)	9.83 (6.11)	9.49 (5.90)	9.56 (5.94)	9.8 (6.09)	13.71 (8.52)	13.55 (8.42)	14.35 (8.92)
• Total right-of-way [ROW width 80 meters (262.5 feet), in hectares (acres)]	93.9 (232)	100 (247)	100.4 (248)	108.1 (267)	110.5 (273)	114.2 (282)	161.6 (399)	159.9 (395)	149.4 (369)
• Number of parcels	17	22	19	25	24	27	42	38	40
• Access roads in kilometers (miles)	2.4 (1.49)	1.63 (1.01)	1.66 (1.03)	6.49 (4.03)	6.36 (3.95)	6.55 (4.07)	5.0 (3.11)	4.22 (2.62)	0.93 (0.58)
• Local road relocations in kilometers (miles)	0	0.39 (0.24)	0	0	0	0	2.85 (1.77)	2.25 (1.40)	1.24 (0.77)
• Potential local road improvement costs	Low	Low	Low	Low	Low	Low	High	High	High
Interchanges (number)	1	1	1	1.5	1.5	1.5	3	3	3
Structures (number)									
• Bypass over local road	2	2	2	3	3	3	3	3	3
• Local road over bypass	5	5	5	1	1	1	5	5	5
• Bypass over railroad	0	0	0	1	1	1	0	0	0
Displacements (number)									
• Residential farm	0	2	0	1	1	1	7	7	4
• Residential non-farm	0	0	0	0	0	0	0	0	0
• Commercial	0	0	0	1	1	1	0	0	0
Plant Community Impacts									
• Total woodland in right-of-way in hectares (acres)	16.6 (40.9)	13.6 (33.6)	14.5 (35.9)	13.2 (32.6)	13.2 (32.6)	7.3 (18.1)	21.6 (53.3)	24.4 (60.3)	24.5 (60.4)
• Total natural community in right-of-way in hectares (acres)	6.24 (15.4)	9.6 (23.7)	14.86 (36.7)	1.7 (4.2)	1.7 (4.2)	1.7 (4.2)	0	0	0
Water Resource Impacts									
• Total wetlands in right-of-way in hectares (acres)	2.96 (7.3)	0.24 (0.6)	0	0.49 (1.2)	0.49 (1.2)	0.2 (0.5)	0.85 (2.1)	0.4 (1.0)	0.53 (1.3)
• Flood plain in right-of-way in hectares (acres)	4.7 (11.6)	1.62 (4.0)	1.62 (4.0)	1.62 (4.0)	1.62 (4.0)	1.46 (3.6)	3.89 (9.6)	0.69 (1.7)	8.34 (20.6)
• Stream crossings (number)	2	2	3	2	2	2	4	2	6

Table III-1. 1997 to 1998 Design Characteristics and Environmental Impacts

Impacts	Alternative Alignments								
	Northwest Bypass			Northeast Bypass			South Bypass		
	NW-1	NW-2	NW-3	NE-1	NE-3	NE-9	S-1	S-2	S-5
• Tributary crossings (number)	4	3	3	4	4	2	14	14	14
Cultural Resource Impacts (number)									
• Archaeological sites in right-of-way	0	0	0	0	0	0	0	0	0
• Potentially eligible historic structures in right-of-way	0	0	0	0	0	0	0	0	0
Agricultural Land in Right-of-Way in hectares (acres)									
• Cash and row crop land	66.7 (164.7)	70.1 (173.0)	65.3 (161.3)	83.8 (206.9)	82.5 (203.7)	90.3 (223.1)	103.8 (256.3)	106.1 (262)	102.8 (253.8)
• Other agricultural land	3.7 (9.1)	7.5 (18.5)	7.7 (18.9)	5.1 (12.5)	5.1 (12.5)	3.6 (8.9)	37.2 (91.9)	32.3 (79.8)	33.8 (83.5)
• Total agricultural land	70.4 (173.8)	77.6 (191.5)	73 (180.2)	88.9 (219.4)	87.6 (216.2)	93.9 (232.0)	141 (348.2)	138.4 (341.8)	136.6 (337.3)
Property Severances (number)									
• Severed parcels	12	12	11	11	11	11	11	14	17
• Diagonal severances	7	5	5	3	6	6	8	7	5
• Small parcel severances (less than five acres)	4	5	5	4	5	5	5	3	6

- Greater woodland impacts – 13.2 hectares (32.6 acres) versus 7.3 hectares (18.1 acres) for NE-9.

- Greater number of stream tributaries crossed – 4 versus 2 for NE-9.

- Reasons S-1 and S-2 were withdrawn from further study:

  - Greater right-of-way requirements and associated agricultural impacts – 161.6 hectares (399 acres) with S-1 and 159.9 hectares (395 acres) with S-2 versus 149.4 hectares (369 acres) for S-5.

  - Longer length of access roads required – 5.0 kilometers (3.1 miles) with S-1 and 4.2 kilometers (2.6 miles) with S-2 versus 0.9 kilometers (0.6 miles) for S-5.

  - Longer length of local road relocation required – 2.9 kilometers (1.8 miles) with S-1 and 2.3 kilometers (1.4 miles) with S-2 versus 1.2 kilometers (0.8 miles) for S-5.

  - Greater number of displacements – 7 with S-1 and S-2 versus 4 for S-5.

  - Greater community impacts because of S-1 and S-2's proximity to the Scotland Glen Subdivision and the Hidden Hills Subdivision.

To determine whether the alignments to be assessed in the Draft Environmental Impact Statement would include a combination of the Northwest and Northeast corridors or the South and Northeast corridors, additional meetings were held with concerned citizens, neighborhood groups, the City of Macomb, and McDonough County. The Northwest alignments, NW-2 and NW-3, were retained, but the South alignment, S-5, was eliminated from further study based on the following factors:

- Greater right-of-way requirements and agricultural impacts – 149 hectares (369 acres) versus approximately 100 hectares (247 acres) with NW-2 and NW-3.

- Greater woodland impacts – 24.5 hectares (60.4 acres) versus 13.6 hectares (33.6 acres) for NW-2 and 14.5 hectares (35.9 acres) for NW-3.

- Greater wetland impacts – 0.5 hectares (1.3 acres) versus 0.2 hectares (0.6 acres) for NW-2 and 0.0 for NW-3.

- Greater flood plain impacts – 8.3 hectares (20.6 acres) versus 1.6 hectares (4.0 acres) for NW-2 and NW-3.

- Higher construction cost - $98 million versus $65 million (based on 1998 cost estimates).

- The South/Northeast combination would divert 25 percent less traffic from existing US 136 and US 67 from the center of Macomb (based on traffic figures projected to the year 2020).

- The South/Northeast combination would result in longer travel time for vehicles traveling north to west or west to north, while the Northwest/Northeast corridor combination would result in faster travel time for all traffic movements.

- The South/Northeast combination would be approximately 45 percent longer – 14.3 kilometers (8.9 miles) versus 9.8 kilometers (6.1 miles).

- The Northwest alignments were endorsed by the McDonough County Board on July 15, 1998 and by City of Macomb on July 20, 1998.

1999 Alignment Studies

Adjustments to the Northeast Alignments to Minimize Impacts

Two portions of the Northeast alignment were re-assessed to minimize agricultural impacts. These adjustments were along the east-west section of the alignment and in the US 136 interchange area.

The adjustments to the east-west section were labeled NE-9R. This new alignment is shown on Exhibit III-2. In order to reduce right-of-way requirements and severances, NE-9R was moved south of the NE-9 alignment. This straightening of the alignment eliminated three severe diagonal severances. To reduce agricultural impacts, portions of the NE-1 alignment near the US 136 interchange (previously eliminated) were revisited in contrast to NE-3. Utilizing the NE-1 alignment, which is a western shift of the interchange, would lower the amount of right-of-way required versus the NE-3 alignment. These alternatives are compared in Table III-2.

Alignments Presented at the April 28, 1999 Public Informational Meeting

In order to receive public input, the following alignments were presented at a public meeting in 1999.

NW-2	NE-9	NE-1
NW-3	NE-9R	NE-3

Alignment Selection

Based on public comment and assessment of environmental and engineering issues, NW-2, NE-9R, and NE-1 were selected in 1999 as the preferred alternative. Comparisons of the northeast alignments are shown in Table III-2, while comparisons of the northwest alignments are presented in Table III-3. The numbers in Table III-2 and Table III-3 compare only the portions of the corridor in which the corridor segments differ (the footnotes at the bottom of each table indicate the limits analyzed for each corridor segment). These alignments are shown in Exhibit III-2. The decision to eliminate NW-3, NE-9, and NE-3 was based on the following factors:

- Reasons NW-3 was withdrawn from further study:
  - Greater woodland impacts – 9.4 hectares (23.1 acres) versus 6.7 hectares (16.5 acres) for NW-2.
  - Greater impacts to the total natural community – 6.1 hectares (15.0 acres) versus 0.9 hectares (2.2 acres) for NW-2.
  - Substantially greater hectares of fragmentation.
  - While NW-2 would use 7 hectares (17.3 acres) more agricultural land, its alignment closely follows the edge of the farm fields resulting is less severe impacts to farming operations than NW-3.
- Reasons NE-9 was withdrawn from further study:
  - Impacted three additional farm parcels.
  - Greater diagonal severance of farm fields.

Table III-2. 1999 Design Characteristics and Environmental Impacts – NE-9 versus NE-9R and NE-1 versus NE-3

Categories	Corridor Segments[1]			
	NE-9	NE-9R	NE-1	NE-3
Alignment Characteristics				
• Length in kilometers (miles)	4.55 (2.83)	4.49 (2.79)	2.64 (1.64)	2.65 (1.65)
• Total right-of-way in hectares (acres)	41.3 (102)	37.3 (92)	43.3 (107)	47.4 (117)
• Number of parcels	9	6	11	11
• Access roads in kilometers (miles)	1.85 (1.15)	1.80 (1.12)	0.66 (0.41)	1.45(0.90)
• Local road relocations in kilometers (miles)	0.0 (0.0)	0.0 (0.0)	2.01 (1.25)	1.61 (1.00)
• Potential local road improvement costs	low	low	low	low
Interchanges (number)	0	0	1	1
Structures (number)				
• Bypass over local road	1	1	2	2
• Local road over bypass	0	0	0	0
• Bypass over railroad	0	0	1	1
Displacements (number)				
• Residential farm	0	0	0	0
• Residential non-farm	0	0	0	0
• Commercial	0	0	1	1
Plant Community Impacts				
• Total woodland in right-of-way in hectares (acres)	3.4 (8.5)	7.0 (17.3)	0.0 (0.0)	0.0 (0.0)
• Total natural community in right-of-way in hectares (acres)	1.70 (4.2)	1.74 (4.3)	0.0 (0.0)	0.0 (0.0)
Water Resource Impacts				
• Total wetlands in right-of-way in hectares (acres)	0.16 (0.4)	0.20 (0.5)	0.0 (0.0)	0.0 (0.0)
• Flood plain in right-of-way in hectares (acres)	1.46 (3.6)	1.46 (3.6)	0.0 (0.0)	0.0 (0.0)
• River crossings (number)	1	1	0	0
• Stream crossings (number)	1	1	1	1
• Tributary crossings (number)	1	1	0	0
Cultural Resource Impacts (number)				
• Archaeological sites in right-of-way	0	0	0	0
• Potentially eligible historic structures in right-of-way	0	0	0	0
Agricultural Land in Right-of-Way in hectares (acres)				
• Cash and row crop land	34.0 (83.9)	26.5 (65.5)	34.4 (85.0)	38.2 (94.3)
• Other agricultural land	2.3 (5.8)	3.0 (7.4)	0.9 (2.3)	1.1 (2.6)
• Total agricultural land	36.3 (89.7)	29.5 (72.9)	35.4 (87.3)	39.2 (96.9)
Property Severances (number)				
• Severed parcels	7	5	3	3
• Diagonal severances	4	2	0	0
• Small parcel severances (less than five acres)	2	0	0	2

[1]The numbers for NE-9 and NE-9R reflect the portion of the Northeast Corridor from the eastern boundary of the Mary Chandler Trust property (Exhibit II-3h) to the northern boundary of the M & R Farms property (Exhibit II-3k). The numbers for NE-1 and NE-3 reflect the portion of the Northeast Corridor from the Burlington Northern Santa Fe (BNSF) railroad (Exhibit II-3m) to 195 meters (640 feet) north of Hospital Road (Exhibit II-3o).

Table III-3. 1999 Design Characteristics and Environmental Impacts – NW-2 versus NW-3

Characteristics	Corridor Segments[1]	
	NW-2	NW-3
Alignment Characteristics		
• Length in kilometers (miles)	5.10 (3.17)	5.12 (3.18)
• Total right-of-way in hectares (acres)	48.6 (120)	42.1 (107)
• Number of parcels	13	11
• Access roads in kilometers (miles)	2.45 (1.52)	1.16 (0.72)
• Local road relocations in kilometers (miles)	0.39 (0.24)	0.0 (0.0)
• Potential local road improvement costs	low	low
Interchanges (number)	0	0
Structures (number)		
• Bypass over local road	1	1
• Local road over bypass	2	2
• Bypass over railroad	0	0
Displacements (number)		
• Residential farm	2	0
• Residential non-farm	0	0
• Commercial	0	0
Plant Community Impacts		
• Total woodland in right-of-way in hectares (acres)	6.7 (16.5)	9.4 (23.1)
• Total natural community in right-of-way in hectares (acres)	0.9 (2.2)	6.1 (15.0)
Water Resource Impacts		
• Total wetlands in right-of-way in hectares (acres)	0.0 (0.0)	0.0 (0.0)
• Flood Plain in right-of-way in hectares (acres)	0.0 (0.0)	0.0 (0.0)
• River crossings (number)	0	0
• Stream crossings (number)	1	2
• Tributary crossings (number)	2	2
Cultural Resource Impacts (number)		
• Archaeological sites in right-of-way	0	0
• Potentially eligible historic structures in right-of-way	0	0
Agricultural Land in Right-of-Way in hectares(acres)		
• Cash and row crop land	34.8 (86.0)	28.7 (70.8)
• Other agricultural land	5.0 (12.4)	4.1 (10.1)
• Total agricultural land	39.8 (98.4)	32.8 (80.9)
Property Severances (number)		
• Severed parcels	8	10
• Diagonal severances	7	4
• Small parcel severances (less than five acres)	2	4

[1]The numbers reflect the portion of the Northwest Corridor between the northern boundary of the J. Corson property (Exhibit II-3d) and 1100E (Exhibit II-3g), that portion of the corridor with two alternate alignments.

- Greater right-of-way requirement – 41.3 hectares (102 acres) versus 37.3 hectares (92 acres) for NE-9R.

- Greater impacts to row crop land – 34 hectares (83.9 acres) versus 26.5 hectares (65.5 acres) for NE-9R.

- Reasons NE-3 was withdrawn from further study:

  - Greater right-of-way requirements – 47.4 hectares (117 acres) versus 43.3 hectares (107 acres) for NE-1.

  - Greater impacts on row crop land – 38.2 hectares (94.3 acres) versus 34.4 hectares (85.0 acres) for NE-1.

Adjustments to NW-2 to Minimize Impacts

To lessen environmental impacts and impacts to farm operations, the north-south portion of NW-2 was shifted approximately 122 meters (400 feet) to the west. This revised alignment was named NW-2R and is shown in Exhibit III-2. The advantages of this shift were:

- Reduced agricultural impacts by moving the alignment to the edge of farmed fields rather than bisecting the fields.

- Reduced impacts to the purebred Suffolk sheep operation on the Corson property.

- Reduced impacts to the potential breeding grounds of the Henslow's sparrow, an Illinois endangered species, and the Loggerhead shrike, an Illinois threatened species.

- Less woodland fragmentation.

- Reduced noise and visual impacts.

The east-west portion of the NW-2 alignment was shifted approximately 91 meters (300 feet) to the north. This revised alignment was part of the NW-2R revision. The advantages of this shift were:

- Reduced farm severances by following the property line of two farm parcels for approximately 838 meters (2,750 feet).

- Reduced severance impacts to the farmed parcel owned by Agronomics north of Springlake Road.

2003 Alignment Studies

A developer owning property bisected by NW-2R erected four dams that created a lake in the middle of the north-south leg of the NW-2R alignment. The lake is approximately 0.8 kilometer (0.5 mile) long. Alignment NW-2R crossed the lake at one of the lake's wider spots and interfered with one of the dams. The profile of NW-2R was also approximately 3.96 meters (13.0 feet) below the surface water elevation of the lake. For these reasons, the NW-2 alignment was revisited to see if it provided a better crossing of the lake. NW-2, which was approximately 400 feet (122 meters) east of NW-2R, crossed the lake at a spot that is 111 feet (34 meters) wider than NW-2R. The profile of NW-2 matched NW-2R, which placed it at approximately 13 feet (3.96 meters) below the surface water elevation of the lake. NW-2 also crossed the lake at one of the dam locations. Therefore, to lessen impacts to the lake, it was necessary to look at another northwest alignment in 2003.

Total avoidance of the lake is not possible. An easterly shift that would avoid the lake would have a substantial impact to residential development along CH 14. To the west, the lake extends to the bluff above Spring Creek. Avoidance options to the west would have substantial impacts to Spring Creek and its flood plain.

In order to avoid conflicts with the lake's dams and to provide a narrower crossing, the NW-2R alignment was shifted further west, but not so far west as to affect Spring Creek (see Exhibit III-2). This shift provided a 187-foot (57-meter) long crossing of the lake as opposed to a 308-foot (94-meter) crossing with NW-2 or a 197-foot (60-meter) crossing with NW-2R (see Exhibit III-3). The shift allowed the alignment to avoid contact with all four of the dams built to create the lake. The profile of the alignment was also raised 18 feet (5.4 meters). This change placed the pavement at five feet (1.5 meters) above the surface of the lake. This new alignment was called NW-15.

The lake crossing would consist of a water elevation equalizing culvert placed on the lakebed and topped by rock fill up to just past the normal pool elevation. The proposed bypass would be constructed on embankment atop the rock fill.

The NW-15 adjustment of NW-2R would not create a substantial change in the overall impacts of the project. A comparison of the NW-2R and NW-15 impacts appears in Table III-4. Although, Table III-4 indicates that woodland and agricultural land use impact is higher with NW-15 compared to NW-2R, all of the agricultural and most of the woodland benefits listed in the section titled "Adjustments to NW-2 to Minimize Impacts," were retained in NW-15. The increase in woodland and agricultural impact reflected in NW-15 was necessitated by the need to minimize impacts to the lake and the dams that created it. The numbers in Table III-4 compare only the portions of the corridor in which corridor segments NW-2R and NW-15 differ (between US 136 and 950 E in the Northwest corridor).

Preferred Alternative

Based on the above analyses, the preferred alternative includes alignments NW-15, NE-9R, and NE-1. (See Exhibit S-2)

III.C DESCRIPTION OF THE PREFERRED ALTERNATIVE

The Macomb Bypass is a proposed four-lane freeway with grade separations at all intersecting roads. The bypass would be 20.5 kilometers (12.7 miles) long. Exhibit S-2 illustrates the location of the preferred alternative. It would begin southwest of Macomb at the planned IL 336/US 136 interchange. It would continue in a new right-of-way west and northwest of Macomb to an interchange with US 67 north of Macomb. It would then proceed east and then south on new right-of-way to an interchange with US 136/US 67 east of Macomb. Exhibit II-2 (all sheets) and Exhibit II-3 (all sheets) show the preferred alternative in detail, overlaid on an aerial photograph, and show it in relation to community and environmental features. The design of the preferred alternative would follow the policies for construction of a freeway contained in the Illinois Department of Transportation's (IDOT) *Bureau of Design and Environment Manual*. The following sections describe the design characteristics, cost, and extent of right-of-way, and construction characteristics of the preferred alternative.

Table III-4. 2003 Environmental Impacts – NW-2R versus NW-15

Characteristics	Corridor Segments[1]	
	NW-2R	NW-15
Land Acquisition		
• Roadway right-of-way in hectares (acres)	103.1 (254.7)	113.0 (279.3)
• Land-locked parcels in hectares (acres)	45.2 (111.7)	39.1 (96.7)
• Total right-of-way in hectares (acres)	148.3 (366.4)	152.1 (376.0)
Displacements		
• Residential	4	3
• Commercial	0	0
Plant Community Impacts		
• Woodland in hectares (acres)	22.7 (56.1)	27.9 (69.0)
• Natural plant communities in hectares (acres)	29.7 (73.4)	34.5 (85.3)
Water Resource Impacts		
• Wetlands in hectares (acres)	0.23 (0.58)	0.58 (1.43)
• Flood plains in hectares (acres)	3.4 (8.3)	3.8 (9.3)
• Stream crossings	7	7
Farmland Impacts		
• Within roadway right-of-way		
Cropland in hectares (acres)	70.2 (173.5)	72.4 (179.0)
Pasture in hectares (acres)	28.1 (69.4)	4.4 (10.9)
Other farmland in hectares (acres)	4.8 (11.8)	36.2 (89.4)
Total farmland in hectares (acres)	103.1 (254.7)	113.0 (279.3)
• Within land-locked parcels		
Cropland in hectares (acres)	13.2 (32.7)	13.4 (33.0)
Pasture in hectares (acres)	8.3 (20.4)	6.8 (16.9)
Other farmland in hectares (acres)	23.7 (58.6)	18.9 (46.8)
Total farmland in hectares (acres)	45.2 (111.7)	39.1 (96.7)
• Severed parcels	14	15
• Diagonal severances	9	13

[1]The numbers compare only the portion of the Northwest Corridor in which segments NW-2R and NW-15 differ. This is the area from US 136 (Exhibit II-3a) to 950 E. (Exhibit II-3e).

III.C.1 Design Characteristics

Design Criteria

Table III-5 presents the basic design criteria used for the preferred alternative. It includes criteria for the bypass and for two sections of existing US 136 that would be altered at the US 136/US 67 interchange on the east end of the project. The preferred alternative proposes to relocate a portion of US 136 east of the project's US 136 interchange. It also proposes to widen US 136 from three to five lanes west of the project's US 136 interchange between Bower Road and the interchange. This section will match in with the existing five-lane section to the west. Exhibit III-4 shows the typical freeway cross-section of the preferred alternative.

Table III-5. Design Criteria

Item	Bypass	Relocated US 136 at US 136/US 67 Interchange	Urban Five-Lane Section on US 136/US 67 West of Interchange
Design Speed	110 km/h (70 mph)	100 km/h (60 mph)	80 km/h (50 mph)
Posted Speed	105 km/h (65 mph)	88 km/h (55 mph)	72 km/h (45 mph)
Minimum Radius of Curves	565 meters (1,850 feet)	440 meters (1,320 feet)	255 meters (840 feet)
Minimum Stopping Sight Distance	180 meters (590 feet)	160 meters (525 feet)	120 meters (400 feet)
Maximum Grade: level rolling	3% 4%	3% 4%	4% 4%
Lane Widths	3.6 meters (12 feet)	3.6 meters (12 feet)	3.6 meters (12 feet)
Median Width (including inner shoulders)	17 meters (56 feet)	Not Applicable	Not Applicable
Outer Shoulder	3 meters (10 feet)	Not Applicable	Not Applicable
Inner Shoulder	2.4 meters (8 feet)	Not Applicable	Not Applicable

The preferred alternative would be constructed a minimum of one meter (3.3 feet) above the surrounding terrain. The sole exception would be near Smith Airfield where the road would be lower to keep the road and the vehicles on it below the aircraft clear zone for the airfield. The preferred alternative's profile (elevation in relation to the surrounding terrain) was designed to reduce the need for borrow, alleviate snow-drifting problems, and maintain existing drainage patterns.

The design would provide a clear zone for the safe use by errant vehicles. It is the area bordering the roadside starting at the edge of traveled pavement. The standard clear zone for a straight road with a design speed of 110 kilometers (70 miles) per hour is 10 meters (32.8 feet).

Access Control and Property Access Roads

The preferred alternative would be a freeway, featuring full control of access. With full access control, access to and from a road is limited to interchanges with selected public highways. The design of such a road either realigns existing roads or continues them over or under a freeway by grade separation. Adjoining property owners do not have direct access to the road. Frontage roads or other local roads, however, provide indirect access to adjacent properties.

Where the placement of the preferred alternative would eliminate all access to the public road system, new access roads are included in the preferred alternative to restore and maintain property access. The detailed designs in Exhibit II-2 (all sheets) and Exhibit II-3 (all sheets) show these new access roads.

Interchanges

The preferred alternative would include interchanges where it intersects US 136 west of Macomb, US 67 north of Macomb and relocated US 136 east of Macomb. Exhibit II-2 (all sheets) and Exhibit II-3 (all sheets) illustrate the interchanges. The IL 336 (FAP 407) project will terminate at the western end of the Macomb bypass with a partial cloverleaf interchange at US 136. This interchange was designed to accommodate a Macomb bypass, but initially only the outer ramps would be constructed to serve IL 336 (FAP 407) traffic to and from the south. The Macomb bypass would add the inner two ramps and a bridge on US 136 over the bypass. The interchange at existing US 67 north of Macomb would be a diamond type with the ramps connecting to the four-lane divided US 67. The project would add to US 67 left turn lanes in the median and the terminal connections. At the US 136/US 67 interchange east of Macomb a bridge would carry a relocated US 136/US 67 over the preferred alternative. The interchange would be a diamond type connecting to the four-lane divided road with curb and gutter. East of the interchange, the relocated US 136 pavement would transition back to two lanes to match the existing pavement. West of the interchange the pavement would transition to an urban five-lane section at the east end of the business area and continue west to meet the current five-lane pavement.

III.C.2 Traffic Volumes

Exhibit III-5 shows the traffic volumes on existing US 136 and US 67 assuming construction of the Macomb Bypass, as well as volumes for the bypass. In 2025, the Macomb Bypass would serve an annual average of 3,700 vpd between IL 336 and US 67 and 4,700 vpd between US 67 and US 136/US 67. Traffic on existing US 136 would drop 3,700 vpd to 4,800 vpd. US 67 would also drop between 3,700 vpd and 4,500 vpd. (See Exhibit I-4 for 2025 traffic forecasts for the No-Action Alternative.) The amount of traffic passing through downtown Macomb on existing US 67 and US 136 would drop approximately 18 to 19 percent.

III.C.3 Cost and Right-of-Way Requirements

The preferred alternative would cost approximately $148.4 million (year 2000 dollars), including $2.3 million to purchase the right-of-way. The amount of right-of-way and land-locked parcels purchased would be approximately 285.7 hectares (706.0 acres). Exhibit II-2 (all sheets) and Exhibit II-3 (all sheets) illustrate the boundaries of the proposed right-of-way.